

Missouri Department of Elementary and Secondary Education

Division of Special Education

Report on First Steps Children Identified through the Newborn
Hearing Screening Program

December 2007

Under the Newborn Hearing Screening law, Section 191.931 RSMo, the Missouri Department of Elementary and Secondary Education shall “monitor the delivery of early intervention services to those infants identified by the newborn hearing screening program and report annually to the department of health.”

This report is divided into five sections as follows:

1. Analysis of the number of children enrolled in First Steps and identified through the newborn hearing screening program during calendar year 2006.
2. Early intervention services provided to Newborn Hearing Screening children under an Individualized Family Services Plans (IFSP).
3. Amplification or other assistive technologies children are receiving under an IFSP to address hearing loss.
4. Children with Sensorineural or Conductive Hearing Loss
5. Children identified in 2002-2005 and their progress within the First Steps program.

Personally identifiable information has been redacted pursuant to provisions of the Family Educational Rights and Privacy Act (FERPA), incorporated by reference in the Individuals with Disabilities Education Act (IDEA).

Section One: Children Identified by the Newborn Hearing Screening program and enrolled in the First Steps program

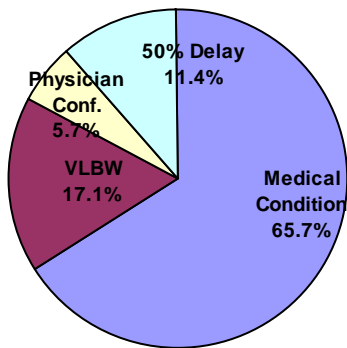
Based on the Department of Health and Senior Services' (DHSS) five-year list of 843 children born in Missouri in the years 2002-2006 and identified through Newborn Hearing Screening (NHS), a total of 392 children (46.5%) were found in the First Steps database as of September 24, 2007, meaning they had at the very least been referred for eligibility determination to a First Steps office.

Of the 206 children on the Hearing Screening list and born in 2006, 86 were found in the First Steps database (41.7%); 70 had been determined eligible for First Steps services based on one of Missouri's First Steps program eligibility criteria (50% delay in one developmental domain, medical condition associated with mental retardation/developmental delay, physician confirmation of other condition

| <u>2006 Newborn Hearing Screening List</u> | |
|--|--|
| 206 total children | |
| 86 in First Steps Database | |
| 70 reached IFSP | |
| 4 | inactivations |
| | 2 withdrawn by parent/guardian |
| | 1 deceased |
| | 1 moved out of state |
| 3 | expired IFSPs, presumably to be renewed soon |
| 63 | active IFSPs |

associated with mental retardation/developmental delay, or very low birth weight¹) and received services through an Individualized Family Service Plan (IFSP). Sixty-three had active IFSPs as of September 24, 2007.

2006 NHS Children with IFSPs
(by Primary Eligibility)



Of 2006's 70 First Steps eligible children, 46 (65.7%) were determined eligible based on Medical Condition associated with MR/DD, 12 (17.1%) based on Very Low Birth Weight, 8 (11.4%) based on 50% delay in one developmental domain, and 4 (5.7%) due to Physician Confirmation of other condition associated with MR/DD.

Of the 206 children on the 2006 list, 36 were deemed to have sensorineural hearing loss. Twenty-eight of them (77.8%) were referred to First Steps, and 24 were found eligible (eligibility rate: 85.7%).

| 2006 NHS Children by Degree of Hearing Loss and First Steps Status | | | | | |
|--|----------|----------------|------------|---------------|---------------|
| Type of Loss | Children | Referred to FS | % Referred | Received IFSP | Eligibility % |
| Sensorineural | 36 | 28 | 77.8% | 24 | 85.7% |
| Auditory Neuropathy | 2 | 1 | 50.0% | 0 | 0.0% |
| Mixed | 2 | 1 | 50.0% | 1 | 100.0% |
| None Listed | 166 | 56 | 33.7% | 45 | 80.4% |

The 70 First Steps eligible children born in 2006 had the following primary diagnoses, 25 of which (35.7%) are related to hearing loss (those related to hearing loss are in boldface below).

- Down's Syndrome – 17
- **Hearing Loss – 14**
- **Sensorineural Hearing Loss – 10**
- Disorders Relating to Extreme Immaturity of Infant or Low Birth Weight Status – 10
- Unspecified Delay in Development – 5
- Cleft Palate and/or Cleft Lip – 2
- Congenital Hydrocephalus – 2
- **Deaf Mutism, Oth. Classifiable – 1**
- Communicating Hydrocephalus – 1

¹ The First Steps eligibility criteria are the same as in previous years; however, in the WebSPOE system, the "medical diagnosis" category is separated into two categories: "medical condition associated with mental retardation/developmental delay" and "physician confirmation of other condition associated with mental retardation/developmental delay."

- Congenital Cytomegalovirus Infec. – 1
- Edwards' Syndrome – 1
- Encephalopathy, Unspec. – 1
- Microcephalus – 1
- Multiple Congenital Anomalies, so described – 1
- Other and Ill-Defined Perinatal Conditions – 1
- Specific Delays in Development – 1
- Streptococcal Meningitis – 1

A total of 365 diagnoses exist for NHS children referred to First Steps and born before 2006. The hearing-related diagnoses are as follows:

- Hearing Loss (specified and unspecified) – 79
- Sensorineural Hearing Loss (specified and unspecified) – 53
- Conductive Hearing Loss – 7
- Neural Hearing Loss – 3
- Central Hearing Loss – 2
- Deaf Mutism – 2
- Sensory Hearing Loss – 2

Other ICD9 designations that appeared more than three times among the First Steps children from DHSS' comprehensive Newborn Hearing Screening list are listed as follows:

- Low Birth Weight Status (any degree) – 33
- Down's Syndrome – 23
- Unspecified Delay in Development – 22
- Cleft Palate (specified or unspecified, with cleft lip or without) – 20
- Disorders Relating to Extreme Immaturity of Infant – 14

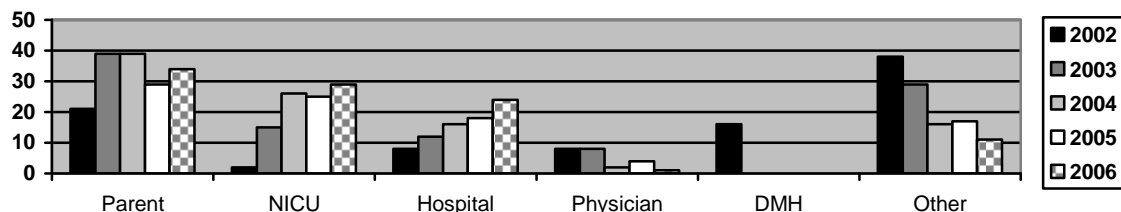
On September 24, 2007, there were also 63 First Steps children with active IFSPs and a hearing-related ICD9 designation who were not on the NHS List. Of these 63, 32 had an ICD9 designation of specified or unspecified Sensorineural Hearing Loss (ICD9 Codes: 389.1, 389.10), 26 had specified or unspecified Hearing Loss (389, 389.9), 3 had Deaf Mutism (389.7), and 2 had Conductive Hearing Loss (389.00, 389.0).

Below is a chart regarding First Steps referral sources. Of the 86 NHS children born in 2006 and referred to First Steps, a few were referred by more than one referral source, resulting in a total of 99 cumulative referral sources. As the table and chart below indicate, data shows that the most common primary referral sources for children with hearing concerns in the First Steps system have been Parent, NICU, and Hospital (other than NICU). With almost every passing year, the percentage of overall referrals falling into these three sources has increased, from 33.3% in 2002, to 64.1% in 2003, to 81.8% in 2004, to 77.4% in 2005, to 87.9% in 2006.

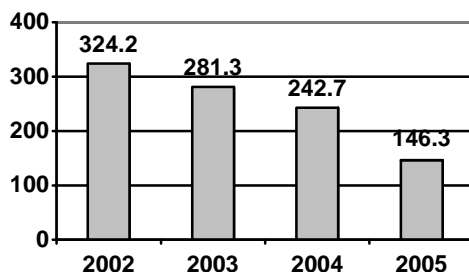
| First Steps Referral Sources for NHS Children by Year of Birth | | | | | | |
|---|-------------|-------------|-------------|-------------|-------------|--------------|
| <i>Referral Source</i> | <i>2006</i> | <i>2005</i> | <i>2004</i> | <i>2003</i> | <i>2002</i> | <i>Total</i> |
| Parent | 34 | 29 | 39 | 39 | 21 | 162 |
| NICU | 29 | 25 | 26 | 15 | 2 | 97 |
| Hospital (other than NICU) | 24 | 18 | 16 | 12 | 8 | 78 |
| Physician (including Psych.) | 1 | 4 | 2 | 8 | 8 | 23 |
| Parents as Teachers | 4 | 4 | 3 | 7 | 2 | 20 |
| Other Health Care Provider | 4 | 4 | 5 | 6 | 1 | 20 |
| Department of Mental Health (DMH) | 0 | 0 | 0 | 0 | 16 | 16 |
| Head Start/Early Head Start | 1 | 0 | 1 | 4 | 9 | 15 |
| Social Service Agency (inc. DFS) | 1 | 3 | 1 | 4 | 4 | 13 |
| Other LEA program | 0 | 0 | 2 | 0 | 9 | 11 |
| Child Care program/provider | 1 | 1 | 1 | 5 | 3 | 11 |
| None | 0 | 0 | 0 | 0 | 6 | 6 |
| Dept. of Health & Senior Services (DHSS) | 0 | 2 | 2 | 1 | 0 | 5 |
| Public Health facilities/providers | 0 | 3 | 1 | 0 | 0 | 4 |
| Other Referral Sources | 0 | 0 | 0 | 0 | 4 | 4 |
| Missouri School for the Deaf (MSD) | 0 | 0 | 0 | 2 | 0 | 2 |
| Total | 99 | 93 | 99 | 103 | 93 | 487 |

The number of referrals coming from NICUs and Hospitals (other than NICU) have increased significantly, from 10 in 2002, to 27 in 2003, to 42 in 2004, to 43 in 2005, to 53 in 2006. This is consistent with the efforts of First Steps and the Department of Elementary and Secondary Education to increase NICU involvement.

Number of Hearing Screening Children Referred to First Steps Program by Referral Source



Avg. Age (in days) at Referral by Year of Birth



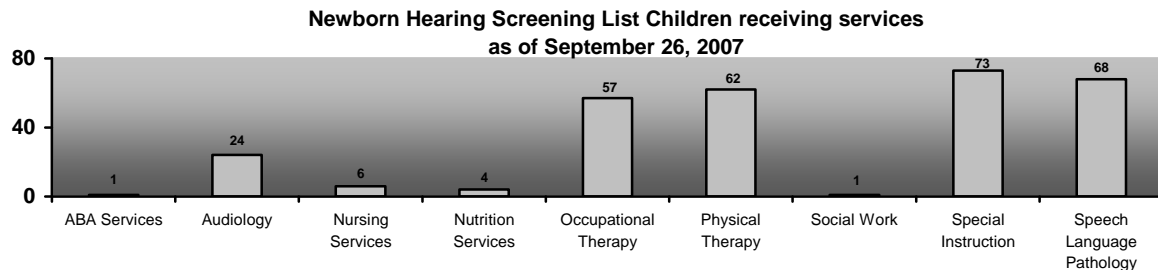
The national Early Hearing Detection and Intervention (EHDI) goal regarding Part C is to have infants enrolled in the Part C program by 6 months of age (approximately 180 days). The table to the left shows the average age at first referral by birth year and degree of hearing loss.

Section Two: Early Intervention Services

IDEA and the Missouri state regulations require that Part C funds may only be used for Early Intervention services that an eligible child needs but is not currently entitled to under any other Federal, State, local or private source. Services and assistive technology reported in this section reflects only those services paid for with Part C funds.

As of September 26, 2007, there were 486 active authorizations for NHS Children in First Steps. Of these authorizations, 25.5% (124) were for Special Instruction, 22.2% (108) Speech Language Pathology, 20.8% (101) Physical Therapy, 18.3% (89) Occupational Therapy, 7.6% (37) Audiology, 3.9% (19) Nutrition, 0.8% (4) Bilingual Interpretation, 0.4% (2) Social Work, and 0.2% (1) for both Nursing Services and Applied Behavior Analysis.

| <i>Service Type</i> | <i>Direct Child Service</i> | <i>Evaluation/ Assessment</i> | <i>Consultation/ Facilitation with Others</i> | <i>Family Education/ Training/ Support</i> | <i>Group Service</i> | <i>Total</i> |
|--|-----------------------------|-------------------------------|---|--|----------------------|--------------|
| Special Instruction | 73 | 3 | 22 | 16 | 10 | 124 |
| Speech Language Pathology | 80 | 6 | 21 | 1 | 0 | 108 |
| Physical Therapy | 70 | 2 | 27 | 2 | 0 | 101 |
| Occupational Therapy | 64 | 1 | 23 | 1 | 0 | 89 |
| Audiology | 20 | 3 | 2 | 12 | 0 | 37 |
| Nutrition Services | 12 | 1 | 6 | 0 | 0 | 19 |
| Bilingual Interpreter | 4 | 0 | 0 | 0 | 0 | 4 |
| Social Work | 1 | 0 | 1 | 0 | 0 | 2 |
| Nursing Services | 0 | 0 | 1 | 0 | 0 | 1 |
| Applied Behavior Analysis ² | 1 | 0 | 0 | 0 | 0 | 1 |
| Grand Total | 325 | 16 | 103 | 32 | 10 | 486 |



² Services to children with Autism Spectrum Disorder.

Section Three: Amplification and Other Assistive Technologies

From August 1, 2006, to July 31, 2007, 37 of the Newborn Hearing Screening children with First Steps IFSPs received some type of amplification device or other assistive technology through the First Steps system. A total of 235 authorizations for assistive technology for these children cost the system \$63,597.61, or an average of \$270.63 per authorization. Assistive technology ranged from superseal covers (\$1.00) to FM systems (over \$3,000.00).

The 235 assistive technology authorizations could be separated into 33 Healthcare Common Procedure Coding System (HCPCS) categories, 13 of which were hearing-related. Those thirteen categories are presented below, in order of cost (highest to lowest):

- Hearing Service (V5299) - \$20,373.50
 - 130 authorizations, \$156.72 per authorization
 - Behind Ear Binaural Hearing Aid (V5140) - \$6,600.00
 - 9 authorizations, \$733.33 per authorization
 - Body-worn Hearing Aid Bone (V5040) - \$6,600.00
 - 2 authorizations, \$3,300.00 per authorization
 - Hearing Aid, Digital, Binaural, bte (V5261) - \$5,500.00
 - 2 authorizations, \$2,750.00 per authorization
 - Hearing Aid, Digital, Monaural, bte (V5257) - \$2,750.00
 - 1 authorization
 - Durable Medical Equipment, Miscellaneous (E1399) - \$1,289.97
 - 11 authorizations, \$117.27 per authorization
 - Ear Mold/Insert (V5264) - \$877.00
 - 12 authorizations, \$73.08 per authorization
 - Supply/Accessory/Service (A9900) - \$454.57
 - 5 authorizations, \$90.91 per authorization
 - Assessment for Hearing Aid (V5010) - \$225.00
 - 4 authorizations, \$56.25 per authorization
 - Hearing Aid Supply/Accessory (V5267) - \$191.00
 - 10 authorizations, \$19.10 per authorization
 - Dispensing fees (monaural or binaural (V5241 and V5160) - \$190.00
 - 2 authorizations, \$95.00 per authorization
 - Ear Impression (V5275) - \$27.00
 - 5 authorizations, \$5.40 per authorization
 - Battery for Hearing Device (V5266) - \$21.50
 - 5 authorizations, \$4.30 per authorization
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Section Four: Children with Sensorineural Hearing Loss

The Missouri Newborn Hearing Screening Program categorizes children with a confirmed hearing loss not only by degree of loss, but also by type of loss. The most identified hearing loss type is sensorineural loss.

In 2005-2006, there were 66 children on the NHS list with sensorineural loss. Fifty-four of these children were referred to First Steps. As of September 24, 2007, 31 had active IFSPs accounting for 136 active service authorizations in the categories of Direct Child Service, Evaluation/Assessment, Consultation/Facilitation with Others, Family Education/Training/Support, and Group Service. Here is the distribution of those authorizations by service type:

| <i>Service Type</i> | <i>Direct Child Service</i> | <i>Evaluation/ Assessment</i> | <i>Consultation/ Facilitation with Others</i> | <i>Family Education/ Training/ Support</i> | <i>Group Service</i> | <i>Total</i> | <i>% of total auths</i> |
|---------------------------|-----------------------------|-------------------------------|---|--|----------------------|--------------|-------------------------|
| Special Instruction | 24 | 0 | 7 | 6 | 4 | 41 | 30.1% |
| Speech Language Pathology | 20 | 2 | 8 | 0 | 0 | 30 | 22.1% |
| Audiology | 11 | 1 | 1 | 7 | 0 | 20 | 14.7% |
| Physical Therapy | 11 | 1 | 6 | 1 | 0 | 19 | 14.0% |
| Occupational Therapy | 12 | 1 | 4 | 0 | 0 | 17 | 12.5% |
| Bilingual Interpreter | 4 | 0 | 0 | 0 | 0 | 4 | 2.9% |
| Nutrition Services | 2 | 0 | 2 | 0 | 0 | 4 | 2.9% |
| Social Work | 1 | 0 | 0 | 0 | 0 | 1 | 0.7% |
| Grand Total | 85 | 5 | 28 | 14 | 4 | 136 | 100.0% |

As for Assistive Technology, 17 children with Sensorineural Hearing Loss received an AT service between August 1, 2006, and July 31, 2007. These children received a total of 126 AT authorizations (7.41 per child) at a cost of \$29,576.84 (\$234.74 per authorization, \$1,739.81 per child). Of the 126 authorizations, 120 were hearing-related. These authorizations are listed below with their corresponding HCPCS code:

- Hearing Service (V5299)
 - 75 authorizations, \$8,379.00 (\$111.72 per authorization)
- Body-worn Hearing Aid Bone (V5040)
 - 2 authorizations, \$6,600.00 (\$3,300.00 per authorization)
- Hearing Aid, Digital, Binaural, bte (V5261)
 - 2 authorizations, \$5,500.00 (\$2,750.00 per authorization)
- Behind Ear Binaural Hearing Aid (V5140)
 - 5 authorizations, \$3,300.00 (\$660.00 per authorization)
- Hearing Aid, Digital, Monaural, bte (V5257)
 - 1 authorization, \$2,750.00
- Ear Mold/Insert (V5264)
 - 9 authorizations, \$667.00 (\$74.11 per authorization)

- Assessment for Hearing Aid (V5010)
 - 4 authorizations, \$225.00 (\$56.25 per authorization)
 - Hearing Aid Supply/Accessory (V5267)
 - 8 authorizations, \$142.00 (\$17.75 per authorization)
 - Dispensing Fees (Monaural and Binaural) (V5241 and V5160)
 - 2 authorizations, \$190.00 (\$95.00 per authorization)
 - Supply/Accessory/Service (A9900)
 - 2 authorizations, \$34.50 (\$17.25 per authorization)
 - Ear Impression (V5275)
 - 5 authorizations, \$27.00 (\$5.40 per authorization)
 - Battery for Hearing Device (V5266)
 - 5 authorizations, \$21.50 (\$4.30 per authorization)
-

Section Five: Follow-up on Children born 2002-05 and identified through the NHS Program

2002 Newborn Hearing Screening List

152 total children
 75 in First Steps Database
 63 reached IFSP
 63 inactivated
 46 Transition to Part B
 4 Unable to Contact/Locate
 3 Moved Out of State
 3 Early Completion of IFSP
 2 Pt. B Elig in Process
 2 Pt. B Ineligible, Exit without Referral
 1 Child Deceased
 1 Withdrawn by Parent/Guardian
 1 Unknown

2003 Newborn Hearing Screening List

154 total children
 87 in First Steps Database
 73 reached IFSP
 73 inactivated
 39 Transition to Part B
 6 Moved Out of State
 6 Pt. B Referral Refused by Parent
 5 Unknown
 4 Pt. B Elig in Process
 4 Withdrawn by Parent/Guardian
 2 Child Deceased
 2 Early Completion of IFSP
 2 Pt. B Ineligible, Exit to Other Program
 2 Pt. B Ineligible, Exit without Referral
 1 Moved to Another SPOE

Of the 306 children born in 2002-2003 and identified by the Newborn Hearing Screening program, 162 had been referred to First Steps as of September 24, 2007. Of those 162, 136 were found eligible and entered into the IFSP process.

All of the 2002 and 2003 children have aged out of First Steps eligibility. Disregarding those children inactivated because of reasons such as "Unable to Contact/Locate," "Moved Out of State," "Moved to Another SPOE," "Child Deceased," "Withdrawn by Parent/Guardian," or "Unknown," 112 children from the 2002 and 2003 NHS lists were inactivated after receiving some amount of First Steps services. 85 of them (75.6%) transitioned into Part B services, 6 (5.4%) were inactivated while their Part B eligibility was still in process, 6 (5.4%) were determined ineligible for Part B services, 6 (5.4%) had their Part B referral refused by their parent/guardian, and 5 (4.5%) were inactivated due to early completion of their IFSP and fulfillment of all Special Education goals.

2004 Newborn Hearing Screening List

165 total children
74 in First Steps Database
60 reached IFSP
50 inactivated
 31 Transition to Part B
 4 Moved Out of State
 4 Pt. B Ineligible, Exit to Other Program
 3 Withdrawn by Parent/Guardian
 2 Unable to Contact/Locate
 2 Child Deceased
 2 Pt. B Eligibility in Process
 1 Early Completion of IFSP
 1 Pt. B Ineligible, Exit without Referral
10 active IFSPs

2005 Newborn Hearing Screening List

166 total children
75 in First Steps Database
57 reached IFSP
8 inactivations
 3 Moved Out of State
 2 Unable to Contact/Locate
 1 Withdrawn by Parent/Guardian
 1 Child Deceased
 1 Early Completion of IFSP
49 active IFSPs

Of the 331 children born in 2004 and 2005 and identified by the Newborn Hearing Screening program, 149 were found in the First Steps database and 117 were found eligible and entered into the IFSP process. Fifty-nine of those were still listed as active in the system as of September 24, 2007.